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AMERICAN NURSERYMAN

Chief Exponent of the American Nursery Trade

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AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

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EDITORIAL communications on subjects connected with nurseries, arboriculture or other phases of commercial horticulture are welcomed by the editor. Also articles on the subjects and papers prepared for conventions of nursery associations.

DATA FOR A.A.N. HISTORY.

The American Nurseryman is compiling a complete history of the American Association of Nurserymen. The material, on its completion, will be presented in these pages.

In 1917, John Watson, then president of the association, sent out a circular giving considerable information relating to the early activities of the organization. The American Nurseryman wishes to obtain a copy of this bulletin. If any reader possesses one that he is willing to lend, or can give any other information about the early years of the association to make the data as complete as possible, please write the editor of this magazine.

IT'S UP TO US!

Since election day, a remarkable development has been manifested in the attitude of business leaders of the country toward a united recovery program. The United States Chamber of Commerce last week proposed that industry take upon itself the responsibility of setting business on the upgrade. This week the National Association of Manu-

facturers called a meeting to devise ways of doing so. The economic council in Washington, called by the President, was for a similar purpose.

The reason is not hard to find. Statistics show only a moderate improvement in trade over a year ago in the manufacturing fields, though mercantile activity is farther advanced. Unemployment is still a severe problem, and relief demands will be heavy the coming winter. The government's efforts, under whatever initials you choose, have not taken the nation out of the depression so far as some expected and many more hoped. The election put complete power in a Congress whose radical ideas may have to be held in check by the President, liberal as are his ideas.

Plainly speaking, therefore, it has been impressed upon business men that we must revive business and restore employment lest the government be forced to try more radical measures and more strenuous methods to reach those ends. And that has all along been the belief of many persons. Business cannot be stimulated from the outside. Its progressive force comes from within.

The groundwork for an advance is much better than a year ago, as is obvious to any thorough observer. Distress has been alleviated. Insolvent enterprises have been reorganized. Indebtedness has been reduced or deferred. We are all working harder and more efficiently. Fear has lost much of its grip.

So it is time to take more courage, to seek customers actively, to undertake production confidently, to employ more workers. In the same measure that we ourselves try to revive business and relieve unemployment, will we share in the improvement that will be built generally by the united efforts of the business men of the country. That is the thought behind the councils of the national bodies mentioned above. It should equally stimulate the individual florist to more active and aggressive efforts in his own sphere. The multiplication of the result to be achieved by a single one of us will accomplish what the wholesale spending of government could not do.

This is a call to every enterprise and every individual in this field to take advantage of the upturn that normally presents itself in autumn to push harder, to try more aggressively to add to the volume of business and to increase the pay roll, because it is the wise and profitable thing to do.

STRAWS IN THE TRADE WIND.

The improvement in industrial activity which began about mid-September continues to be maintained. For the week ended November 3, the New York Times weekly business index stood at 75.6, compared with 75.3 the previous week and with 72.5 last year. This marks the first time in five months that the index has crossed last year's level. Railroad car-loadings led the advance, followed by steel mill activity, cotton cloth output and a nominal rise in lumber production. Electric power production eased off slightly, while automobile production declined sharply, largely because of model change-overs.

Meanwhile, November is off to a decidedly good start in retail trade, according to Dun & Bradstreet. Volume thus far, day against day, is running seven to twelve per cent larger than a year ago in department and women's specialty shops, with a far higher percentage average for retail sales as a whole. As a result, wholesale buying has also spurred forward.

A marked expansion in building operations throughout the country is revealed in the latest survey compiled by Dun & Bradstreet for the 215 cities, including New York, regularly reporting. As against a normal seasonal increase of about two and one-half per cent, the volume of permits taken out during October for new buildings, alterations, additions and repairs showed a rise of 40.9 per cent over September. Except for last May, the October total was the largest since April, 1932, and represented a gain of 42.9 per cent over October, 1933. This upturn brought the total estimated value of permits for the first ten months of this year to fifteen per cent above the same months last year.

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AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

The Chief Exponent of the American Nursery Trade

*The Nurseryman's Forte:
To Make America More Beautiful and Fruitful*

Vol. LX

DECEMBER 1, 1934

No. 11

Fruit Crop Outlook for 1935

Government Bureau Issues Series of Comprehensive Reports on Present Conditions and Prospects in Fruit-growing Industry

The outlook for 1935 for the country's principal fruit crops is suggested in a series of reports recently issued by the bureau of agricultural economics of the United States Department of Agriculture. Herewith are presented some of the chief points from the data given on strawberries, grapes, pears, cherries, apples and peaches. Acreage figures, price trends, damage from drought, winter injury and export prospects are among the topics referred to.

Strawberries.

Preliminary estimates indicate that the commercial strawberry acreage for 1935 will be about fifteen per cent below last year's, with the percentage of first, second and third-year beds about the same as in 1934. The principal reduction in acreage is found in the states of Arkansas, Missouri, Oklahoma and Kansas and is largely due to the drought of 1934.

From 1932 to 1934, production was greatly increased, and prices were low, with large quantities of berries not harvested. In most regions, 1934 prices were higher than in 1933, but were still below the 5-year average of 1928 to 1932.

In the early-shipping states, estimates indicate 40,000 acres for 1935, about fifteen per cent below the peak of 1933 and the lowest acreage since 1928. In the second-early states, the 1935 acreage is expected to be about twenty-eight per cent less than in 1934. In the intermediate states, acreage will be twenty-five per cent below 1934 and nineteen per cent below the 5-year average. In the eastern late states, it is estimated acreage will be about four per cent below 1934. In the Pacific coast and mountain states, an increase of about ten per cent over 1934 is expected.

Grapes.

Due to the fact that existing plantings of grapes in this country are more than ample to take care of the demand for table, raisin and wine requirements, there is little likelihood of new plantings being made for several years. Even considering the increased use of grapes for wine since the repeal of prohibition, the market is oversupplied. The raisin situation, however, appears more favorable than in 1933. The carry-over from the current year is reduced materially over recent years.

Prices increased during 1934 over the lows of 1932 and 1933, due to smaller supply and improved demand. Damage due to drought and winter damage will affect the producing capacity of the 1935 crop, but will not materially lower national production capacity. It is expected that new and replacement plantings will largely offset the reduced acreage caused by drought and winter killing.

Pears.

Pear production has increased steadily in the United States for the past thirty years and in favorable years the production is greater than can be readily marketed. The centers of production have moved from small farm orchards to large commercial orchards and from the east to the Pacific coast states. Planting of new orchards has decreased, except in the Hood valley in Oregon, where there is a tendency to replace apples with pears.

Commercial orchards have been maintained in good condition in Michigan, Indiana and Illinois, but elsewhere have suffered generally from neglect. There was also loss from severe cold last year in New York and Pennsylvania. It is probable that production on the present acreage will reach a peak in a few years.

The use of fresh pears increased last season, both in quantity and percentage, over the previous year. Exports of fresh, dried and canned pears increased in the past two years. The United States is the chief source of pear exports, and there is no danger of its being displaced in the near future, although Canada and Australia have been increasing their output of canned pears. The export outlook for the remainder of the 1934-35 season is good for fresh and canned pears, but rather unsatisfactory for dried pears.

Cherries.

Although new plantings of cherries since 1930 have been light, production will continue to increase for at least another five years and is likely to cause burdensome surpluses in normal years. It is estimated that there are twenty-nine per cent more bearing trees in orchards now than in 1930. Production is usually more than can be marketed profitably and will continue to increase for at least five years as former plantings come into bearing.

The production outlook for sweet

cherries is much the same as for sour. Orchards have generally received good care, but if low prices continue, some abandonment may be expected. The recent drought has probably killed a large number of trees in Utah. Plantings in the western states have been light since 1930, but have increased in the eastern states within trucking distance of large cities and where sales can be made from roadside stands. Eastern states experienced unusually heavy loss during the winter of 1933-34.

Apples.

Production of apples for the past five years has been lower than average, but for the next five years will probably not drop further. Moderate replacements and new planting will be necessary to maintain the present volume of production ten to fifteen years from now. Competition in foreign markets is increasing. Keen competition from other fruits, especially citrus fruits, is expected to continue.

It appears that from 3,000,000 to 3,500,000 apple trees were killed or seriously damaged by the severe winter of 1933-34. Of these, ninety to ninety-five per cent was of bearing age. Losses were greatest in New York and New England. Baldwin, Greening, Wagener, and Grimes Golden varieties suffered most. McIntosh, Wealthy and Duchess came through well. Damage from the drought is considered slight and, probably, temporary.

It is believed that the agricultural census of 1935 will show the total number of apple trees to be less than one-half of the number reported in 1910 and not over seventy per cent of the number listed in 1925. The total number probably will not greatly exceed 95,000,000 trees. A large proportion of the trees has now reached the minimum bearing capacity and will begin to decline about 1945. Plantings have been light during the past five years, but there are indications of renewed interest. New plantings are largely of McIntosh, color strains of Delicious, Winesap, Jonathan, Stayman, Winesap and Rome Beauty. Farm orchards have deteriorated of late, but producing commercial orchards have generally had good care.

The decline of production during the past five years has been due more to poor growing conditions than to reduction in bearing capacity. Potential bear-

ing capacity per tree has increased about fifty per cent from 1910 to 1934. Prices dropped from 1929 to 1932 and increased in 1933 and 1934.

In eleven western states the orchards are now producing their maximum, and production will tend to decrease for the next several years. In the central states a large proportion of the trees is young. With normal conditions, production can be maintained and probably increased with moderate annual plantings. In the eastern states, production has not decreased materially in the past five years, but due to the heavy loss during the past winter will probably decline for several years until new trees can be brought into bearing.

Export business will probably be less this year than last, because of the short crop in this country and increased competition from abroad, as well as because of trade restrictions.

Peaches.

For the country as a whole, production of fresh peaches is not now excessive and will probably remain about the same for the next five years. Production for canning purposes is in excess of the demand and is likely to decrease. Orchards generally are in good condition. There has been more planting this year than in the past several years, though the number of bearing trees is smaller. Prices for peaches declined from 1929 to 1932 and increased during 1933 and 1934.

In the southern states, production has declined considerably in the past three years; South Carolina alone shows an increase. On the Atlantic coast there has been a slight downward trend. New York state suffered severely from the cold last winter. The middle west shows little change. Throughout the west, production is declining.

TRADE PROSPECTS.

More Optimistic Reports.

In reports received subsequently to those quoted in the last issue of *The American Nurseryman* relative to trade conditions are similar expressions of better feeling over the spring prospects and mention of improvement in the fall business.

Paul V. Fortmiller, secretary of the Jackson & Perkins Co., Newark, N. Y., comments as follows:

"Our volume of business so far this season has been very satisfactory. The volume of stock shipped for fall planting is just about equal to last year, but our sales for winter and spring delivery show a heavy advance over sales at this same time last season. One encouraging feature of this situation is the fact that the increase is not confined to any one locality or to any one line of material, nor is it due to a few especially large orders. The sales cover our complete list and the orders are from various parts of the country."

"It seems to us that the prospects for next spring are much brighter than for many years. Patented plants, nationally advertised, are stimulating sales. Roses and perennials are particularly in demand. Shrubs seem to be coming back and there is also some activity in ornamental trees and evergreens. Of course, fruit trees will be a complete sell out early."

That "distress" stock continues to be

a factor delaying improvement in some parts of the country is suggested in the following response of H. B. Chase, president of the Chase Nursery Co., Chase, Ala.:

"Trade conditions in this region are improving, with plenty of room for additional betterment. Highway plantings and T. V. A. work are calling for long lists of stock, much of which is not available and much of which is still being quoted by some individuals at panic prices and will continue to be so quoted as long as distress stock is in sight. When such stock is either sold or destroyed as worthless, we will begin to see an improvement in prices of the materials used in these large projects. Until then, it appears the successful bidders are content to work on a small margin or none at all."

The regular run of fall business in this section shows a gain over a year ago—nothing to be excited about, but a gain. Bookings for spring are also ahead of those of a year ago at this time.

"There is plenty of money in the banks hereabouts, but the lucky or wise owners of it don't dare invest or lend it. All they ask is five per cent and safety, and in these parts the custom for generations was eight per cent for every dollar lent. Perhaps this change should also be tallied as an improvement."

ROCK GARDEN EXHIBITION.

To Be Staged at Cincinnati in May.

The American Rock Garden Society, the headquarters of which are at 522 Fifth avenue, New York, announces that the first national rock garden exhibition will be held in Cincinnati, O., May 16 to 18, 1935. Through the park commission of the city of Cincinnati, the exhibition will be staged in a building and adjacent court at Fleischmann park.

Arrangements for the show are in the hands of a local show committee, of which Robert Senior, Cincinnati, regional vice-president of the north central region of the American Rock Garden Society, is chairman. The schedule is in the hands of the schedule committee, which consists of J. J. Grullemans, Mentor, O., chairman; Marcel LePiniec, Bergenfield, N. J.; Montague Free, Brooklyn, N. Y.; James Esson, Great Neck, N. Y.; Dr. C. T. Hilton, Port Alberni, B. C., Canada; Fred Borsch, Maplewood, Ore.; W. N. Craig, Weymouth, Mass.; T. H. Everett, New York; Mrs. Silas B. Walters, Cincinnati, O., and Robert Senior, Cincinnati, O. The schedule will be available about January 1.

Rock Garden Society's Convention.

The American Rock Garden Society will hold its second annual convention on the second day of the exhibition, May 17, at the Alms hotel, Cincinnati. The program provides for a meeting of the executive board and the annual meeting of the members of the society in the morning, followed by a luncheon. The afternoon will be devoted to visiting the exhibition and inspecting interesting rock gardens in Cincinnati and vicinity. In the evening a lecture will be held to which the gardening public will be welcome.

The American Rock Garden Society,

organized at a meeting in New York last March, has members throughout the United States and Canada. The society is divided into regional groups: Washington region; north central states region; south Atlantic states region; Rocky mountain states region; south Pacific states region; Oregon region, and the western Canadian provinces region. Regional activities are carried on under the direction of regional vice-presidents.

The objects of the society are to encourage good design and construction of rock gardens, to promote interest in and disseminate information on the cultivation of plants suitable for rock gardens under local conditions, to further the adoption of correct nomenclature, to hold meetings and exhibitions and to encourage and promote plant exploration.

WINTER CONVENTIONS AHEAD.

The first of the winter series of nurserymen's conventions will be that of the Minnesota State Nurserymen's Association, which will be held December 17 and 18 at the Lowry hotel, St. Paul, Minn., an announcement of which has been sent out this week by W. T. Cowperthwaite, secretary. All indications point to a good attendance at this meeting, according to Mr. Cowperthwaite, who reports: "Business conditions have definitely improved this fall and there is a hopeful outlook as to spring trade."

Massachusetts nurserymen will meet at the Hotel Statler, Boston, January 8.

The Illinois State Nurserymen's Association will hold its annual convention January 16 and 17 at the Hotel Sherman, Chicago, Ill.

The New England Nurserymen's Association will hold its annual convention January 23 and 24 at the Hotel Statler, Boston, Mass.

Other meetings usually held during January are those of the Ohio Nurserymen's Association, New York State Nurserymen's Association, Oklahoma State Nurserymen's Association and the Western Association of Nurserymen.

QUARANTINE CONFERENCES.

December 3, 4 and 5, three public conferences on as many plant quarantines are scheduled to be held at the Department of Agriculture auditorium, Washington, D. C. The discussions will be concerned with the white pine blister rust disease, the gypsy moth and the Dutch elm disease in the order given.

The present status of the control activities will be presented, probably along with proposals for additional preventive measures. As all three of these quarantines have taken on added importance in recent months, it is likely that considerable valuable information will be presented at the conferences.

LARGE tracts of poplar, beech and oak are being set out in the sand dunes near the coast of Tripolitania in northern Africa to bring under control the troublesome movable sand dunes.

PROCEEDINGS of the fifty-ninth annual convention of the American Association of Nurserymen, at New York, July 17 to 19, 1934, appear in a neatly printed volume of 194 pages, just sent to members by Secretary Charles Sizemore. It is of special interest for its record of discussion of the marketing agreement.

State Association Meetings

IOWA MEETING AT AMES.

Discussion of the drought during the past summer and its effect upon the supply of nursery stock in Iowa and the midwest was an important feature of the meeting of the Iowa Nurserymen's Association, at Iowa State College, Ames, November 16. A great deal of young stock was lost, and perennials not under irrigation suffered pretty severely. The fact that larger trees and shrubs did not make the normal growth is not serious, because it prevented some of them growing out of the planting sizes most desired.

At the morning session, A. J. Bruce, Des Moines, presented his address as president, and C. C. Smith, Charles City, gave his report as secretary-treasurer.

J. M. Hall, landscape engineer of the Iowa highway commission, talked on roadside improvement in Iowa, which made its initial start this year under the highway commission with the aid of federal funds. Prior to this year, several projects had been undertaken by various organizations, including the nurserymen's association. The first project using federal funds was that on the highway from Ames to Blairsburg. Later, projects ranging from six to thirty miles were started in several counties. The highway commission felt a program of several miles to a project would provide better examples of typical Iowa highway improvement than isolated bits scattered over the state. The general plan has been of informal planting so far. The choice of varieties has been almost entirely of native material so far as it is available and acceptable. In the main, only the hardwood trees are planted. Some evergreens have been used and in fitting locations small flowering trees have been planted. A longer list of shrubs and vines has been employed. An effort is being made to use material that will act as a game cover and supply food to birds. Farmsteads along the highway are improved wherever possible. The value of the work as a relief program is notable, the percentage of costs going directly into labor running as high as eighty-five to ninety per cent. Several determining factors are involved in regard to future work, but the most important is that of funds to carry on. This will be determined by the reaction of the public to present projects. Public interest and legislation will be necessary to provide the funds to go forward with further programs of highway beautification.

H. L. Lantz, of Iowa State College, spoke about new fruits of interest to Iowa nurserymen and orchardists. Vernon Stoutemyer, also of the college staff, spoke briefly on recent developments in plant propagation. R. R. Rothacker, of Ames, told of the new arboretum for Iowa State College.

Vice-president H. E. Russell, Des Moines, discussed the functions of the Washington marketing agreement.

After business sessions in the morning and afternoon, a joint horticultural banquet was held in conjunction with the florists, present for their annual gathering. Professor B. S. Pickett was toastmaster. In the evening an address by Henry A. Wallace, Secretary of Agriculture, brought a general attendance.

STOCK FOR SHELTER BELT.

Nurserymen from Canada to Texas through which the proposed federal shelter belt will pass were assured by D. S. Olson, assistant director of the project and supervisor of nurseries and planting, that they would participate in furnishing seedling stocks for the planting at a meeting called by the Nebraska Nurserymen's Association at the Cornhusker hotel, Lincoln, Neb., November 9. About thirty-five attended, representing six states. Harry Rigdon, Seward, Neb., presided.

Nurserymen also sought for estimates of the seedling stock requirements for the planting, but were told that the technical information for so large a project had not as yet been completed. The details for the seedling requirements will be worked out so that the government can enter negotiations with the nurseries in time for planting of seed beds in the spring.

It was also said the government may find it necessary to set out nursery seed beds to augment the supply that could be grown in private nurseries, to furnish varieties of conifers and others and to do experimental work, although the government nursery operations would be on a small scale compared to the business that would be done with private nurseries.

Many of the nurserymen at the Nebraska meeting expressed faith in the shelter belt project provided care is given the trees after they are planted. Sufficient moisture can be obtained to propagate the trees in normal years of rainfall through cultivation, they said. The nurserymen expressed a willingness to enter into any reasonable agreement to grow the trees from seed, rather than see the government start nurseries for that purpose, which they feel would be to the detriment of the future of existing private nurseries.

PROTEST STATE NURSERIES.

At a meeting held November 7 in connection with the convention of the Florida State Florists' Association at Orlando, Fla., November 7, the nurserymen, holding a separate session, passed a resolution protesting the establishment of state C. C. C. F. E. R. A. or other landscape nurseries similar in nature. It was also decided to start an intensive drive for membership in the state nurserymen's group in the near future.

Speakers and their topics on the program at the meeting included M. J. Daetwyler, Orlando, "Civic Nurseries;" A. N. Watson, Monticello, "Coöperation and Its Benefits to Nurserymen," and J. P. Prevatt, landscape supervisor for the state road department, "How Nurserymen Can Coöperate in Highway Beautification." A paper prepared by T. B. Massie, engineer for roadside improvement of the Florida road department, on "Roadside Improvement under the State Road Department of Florida," was read to the group.

The Central California Nurserymen's Association held its annual turkey dinner recently at the Florence Nursery, Niles, Cal. J. R. Crombie, Oakland, presided.

MINNESOTA FLOWER SHOW.

The annual meeting and show of the Minnesota State Horticultural Society were held at the Lowry hotel, St. Paul, Minn., November 13 to 15. In point of numbers, the entries were equal to previous exhibitions; the quality, however, appeared to be much better than usual.

At the banquet held Wednesday evening, November 14, John Sten, Red Wing; William Anderson, St. Paul, and A. M. Brand, Faribault, were presented with the society's achievement medal for peony exhibits formerly made.

The Minnesota Fruit Growers' Association staged a fruit-judging contest November 14 and the results were announced during the banquet. The prize was presented by Ben Dunn, Rochester, president of the Fruit Growers' Association, to Vincent Bailey, of the J. V. Bailey Nurseries, Newport. Edwin Cutting, son of the proprietor of Cutting's Nursery, Byron; D. C. Webster, La Crescent; P. Gigen, and L. G. Harris were runners-up in the contest.

One of the principal talks was given by Dr. Henry Schmitz, head of the college of forestry, University Farm. The speaker brought out the fact that the three principal projects of interest to nurserymen now being considered by the federal government—shelter belt, conservation and soil erosion control—are all old matters to the State Horticultural Society. Forty-five years ago, Mr. Wedge, of the Wedge Nursery, Inc., Albert Lea, outlined a plan for a shelter belt, while fifty and sixty years ago, as shown by the records of the society, conservation and soil erosion control were topics on the program.

Wednesday afternoon, November 14, Miss Anna Streed, Little Falls, gave an interesting talk on "Irrigation" and in answer to a question as to cost of operation stated that the cost to her was about 14 cents for 2,000 gallons of water.

Roy D. Underwood, of the Jewell Nursery Co., Lake City, gave an interesting talk Thursday morning, November 15, on home grounds planting. H. J. Rahmlow, Madison, Wis., spoke on flower arrangement. Miss Helen Fischer presented a thoroughly practical talk on table setting and decorations.

MEET AT MINNEAPOLIS.

The Twin City Nurserymen's Association opened its winter schedule of meetings at Wade's restaurant, Minneapolis, Minn., Wednesday evening, November 21. One of the largest gatherings seen for several years greeted the president, H. J. Reed, when he opened the meeting for business. The president extended a warm welcome to all and stated he had not obtained a special speaker in view of the fact that a number of important matters were scheduled to come before the meeting for review.

The association voted to ask the Minnesota State Nurserymen's Association for the privilege of holding a special meeting Monday evening, December 17, at which time the state organization will be in session in the St. Paul hotel, St. Paul, Minn. The state association will hold its annual convention in St. Paul December 17 and 18.

Forcing Perennials

W. A. Toole Describes Methods of Bringing Potted Perennials into Bloom for Winter Sales

The present trend is for a continuous supply of novelties in almost every kind of merchandise. With some lines this is met by new names for old products, which may be done up in new and more attractive packages. While attractive packaging still holds possibilities in flowers and plants, for the present the demand for novelty must be met by new varieties of old flowers or the presentation of new or out-of-season kinds.

Most kinds of hardy perennials the natural flowering date of which is before the middle part of June can be forced to earlier blooming with fair success if rightly handled. Many kinds that can be forced are not of much practical value, either as cut flowers or pot plants, but a great many are really well worth forcing if the trade calls for novelties. As a rule, the buyers in the smaller towns are less appreciative of novelties than are those in larger places.

Practically all hardy plants demand a period of rest and freezing before being forced. With few exceptions, attempts to force varieties without a period of cold and rest mean only a slow stunted growth without successful results.

Bleeding Hearts.

One of the easier perennials to force into winter bloom is the old-fashioned bleeding heart, *Dicentra spectabilis*. One-year-old field-grown plants, dug in the fall and stored in a cold cellar or covered outdoors, can be brought indoors and thawed out about January 15. After thawing them out, trim back the most unmanageable root tips and, if the clumps are large, divide them.

The plants can then be put in pots of suitable size. The writer, however, prefers to set them closely in deep flats, filling the spaces with sand or damp peat. If the roots are kept well soaked and at a temperature of about 50 degrees, they will soon start into growth. When the sprouts are three or four inches long,

the roots can be removed from the flats, divided further and trimmed to fit the desired size of pots.

By starting the roots into growth before potting, one can set the clumps so as to get a more shapely plant. Kept at about 50 degrees, it will flower for St. Valentine's day.

Bleeding hearts will stand harder forcing, to get them in on time. If there is a demand, forced plants can be had in succession all winter by thawing out the roots at intervals. Forced bleeding hearts bloom with much less foliage than the outdoor plants in spring. As cut flowers, they have little value, but they are an interesting pot plant novelty.

Doronicums.

Doronicum excelsum and *Doronicum caucasicum* are being forced in increasing numbers for winter cut flowers. It is the nature of doronicums to rest for a period during the latter part of summer. They start up new growth in fall and, so far as the writer can see, do not require freezing or a further rest period for winter flowering.

Heavy clumps can be divided, as they seem to show natural division lines before planting. The plants can be set in a raised bench about six to eight inches apart each way. Soil suited to carnations does well for doronicums. Until growth starts, water must be given sparingly. A cool house is desirable for this and other forced perennials. Flowering usually starts in February. The blooms have much the appearance of a clear yellow gerbera. The cutting stem is twelve to fifteen inches in length. Staking or tying is not needed, and little disbudding has to be done.

Doronicum Clusii is smaller in growth and has smaller flowers. It may have possibilities as a late winter pot plant.

Rock Garden Subjects.

Practically all of the early-flowering rock garden plants bloom readily under mild forcing if given freezing temperatures until January 1. Unfortunately, most of these plants have a short flowering season anyway and are not lasting in the home. Their chief value would be for their novelty and decorative value in the store. For economy of space, forcing can be done in flats, the plants being transferred to pots of suitable size when showing buds.

Among the subjects found most attractive to customers in the writer's experience are *Alyssum saxatile compactum*, *Armeria Laecheana*, *Gypsophila repens*, *Linaria alpina*, the hardy English primrose and violas in variety. *Viola Jersey Gem* refuses to be hurried much in flowering.

Natives That Will Force.

The native *Polemonium reptans* forces easily and makes an attractive pot plant in late February and March. Strong one or two-year-old clumps can be given the cold treatment and taken into a cool house about New Year's or a little later. If placed in 5-inch pots and given a cool house, this plant will develop rapidly

and start flowering in four to six weeks, depending on the temperature given. In common with most forced plants, it will grow more rapidly as spring approaches. *Polemonium reptans* requires plenty of water at all times. The violet blue flowers are highly attractive.

Another native plant that creates considerable interest when forced is the moccasin flower, *Cypripedium acaule*, shown in the accompanying illustration. This orchid is rather difficult to grow under cultivation, because of its high acid soil requirements, but is the easiest of the lady's-slippers to force. Select roots with strong buds and store them in moss where they will freeze. Bring them into a cool house and thaw them out about mid-January. Pot one or more crowns in a 4-inch or larger pot, using only sphagnum moss to pack around the roots. Pack the moss firmly, so the stem will stay upright when in flower. Keep the moss wet at all times. The time of flowering can be hastened by giving more heat, though like all forced plants they should have a comparatively cool place to start with. Flowers should appear in five or six weeks.

The yellow and showy lady's-slippers will also force, but they are slower to develop. Early in the winter some plants will flower much more rapidly than others.

BOSTON SCIENCE COURSE.

The second course of lectures in the science course for gardeners given under the direction of the National Association of Gardeners and the Massachusetts Horticultural Society at Boston, Mass., will open at 8 p. m. Wednesday evening, December 12. Students may register for this course even though they have not taken the first course in this series. Any person employed in a greenhouse or nursery establishment, on a private estate or anyone intensely interested in horticulture is eligible.

This series of lectures will cover plant morphology, or the structures of root, stem, leaf, flower and seed and the development of these parts; the nature of the plant cell and its organization, and how plants are modified to meet extreme conditions of soil and climate. Living plant material will be used as far as possible, but the student will also have an opportunity to become familiar with the use of a high-powered microscope.

Dr. E. J. Haertl, who has been so successful with the course in systematic botany, has been retained for the lectures in plant morphology.

Registrations may be sent to Raymond E. Smith, 447 Andover street, Lawrence, Mass., or Arno H. Nehrling, director, Horticultural Hall, Boston.

FRED EDMUNDS, park gardener of Portland, Ore., was recently appointed official curator of the international rose test garden at Washington park, Portland.

THE Van Ness Water Gardens, Upland, Cal., were host to fourteen members of the Redlands, Cal., Garden Club recently. Mrs. Robert E. Van Ness addressed the group on the construction of water gardens and the planting and care of water plants. She reports a very good year's business. The firm has added over 4,000 feet of concrete pools, which are an objective of easterners' sightseeing trips here.



Forced *Cypripedium acaule*.

Certified Fruit Planting Stock

Value of Certified Planting Stock to Successful Fruit Growing Told by Head of Minnesota State Nursery Inspection Department

The number of growers of certified fruit plants, particularly raspberries and strawberries, has increased considerably during the past two years. Producers of certified plants have continued to be more careful about the matters of disease-free plants, trueness to name and, in general, the production of vigorous stock. I believe at present we have set in Minnesota one of the highest standards for the production of healthy fruit stock known in the country. Especially does this refer to our raspberry and strawberry inspection system, which will be, unless all signs fail, one of the outstanding small fruit growing projects in the country.

Minnesota is fast becoming one of the leading small fruit producing states in the Union, and we who are partly responsible for the production of clean certified stock realize the necessity of fulfilling the fruit grower's wish of having healthy plants with which to start. We all know that a small difference in the cost of the original plants used in these plantings means little as far as expenditure is concerned, but it does have a lot to do with results. That there is some illegal transportation, selling or giving away of noninspected plants at the present time I realize, but there is not so much as some people think.

Coöperation Expected.

It may be well for me to bring out the important factor of coöperation in helping us apprehend those who are selling, giving away and distributing insect-infested and diseased stock over the state. We, with our small force, are doing everything in our power to stop this sort of thing. If a person is violating the law and endangering your community by transporting or by offering to distribute plants which are not known to be free of dangerous diseases and insects it is certainly no crime to report it. In most cases we find in tracing down rumors of such practices that they are false and merely things that are easy to say in general conversation by those who usually sit on the side lines and condemn the activities of any part of a governmental program. It is our business, quite specifically stated in the law, to do everything within our power to prevent the dissemination of diseased and insect-infested nursery stock.

Although our funds have unfortunately been brought down to a low amount, with the backing of all interested in horticulture we are going to advance our program for protecting the industry as rapidly as possible. All of you realize what we are doing with regard to raspberry plant certification, and if you have been growing fruit, you know it is vital to have clean stock with which to start.

Minnesota System Praised.

At a recent conference at Denver, Colo., which I attended and which was attended by twenty persons interested

Address given by Prof. A. G. Ruggles, head of the Minnesota state nursery inspection department, at the recent annual meeting of the Minnesota State Horticultural Society, at Minneapolis.

in insect-control work in fifteen different states, I heard high praise for Minnesota's program in raspberry and strawberry production. Many buyers and growers from outside the state have continually stated that it paid them to buy fresh disease-free Minnesota plants for their new plantings rather than to use their old stock. Our system of inspection guarantees these growers that their stock will be as reasonably free from these diseases as can be expected.

No doubt many of you have already heard of our strawberry plant certification program in this state, which was instituted about two years ago and was under full headway this past summer. Regardless of the variety you choose, it is vitally important to plant certified plants. By that we mean plants that carry a special certification of the state division of insect control and nursery inspection, signifying that they have had a special rigid inspection and are certified apparently free from diseases caused by nematodes, such as dwarf, root-knot and nematode gall; virus diseases, such as strawberry yellows and witches'-broom; diseases of which causes are not definitely known, and all other known dangerous diseases of leaves, crowns and roots of strawberries. The certification also applies to the apparent freedom from dangerous insects of strawberries.

Handling Practices Improving.

Nurseries know how to grow high-class stock and they are also learning how to store strawberries in such a way that we may change our whole system of handling this kind of nursery stock. We realize that it is necessary for us to find some means whereby these plants will be ready for shipment early enough in the spring to supply the demand of some of the more southern states.

Ordinary digging time in Minnesota is too late for some of these markets. If plants are properly stored during the winter they can be taken out in the spring and shipped to those markets at almost any time. One of our larger nurseries has stored over a million plants this fall. Other smaller nurseries are storing hundreds of thousands of plants. Through experimental work carried on in our division we found that if strawberry plants are properly stored they can be brought through the winter without any apparent injury and will produce healthy vigorous plantings.

Recognition Given.

There are several interesting and important statements in the more prominent publications in the country, scientific and otherwise, on strawberry diseases. In a reprint of the Journal of Economic Entomology, Vol. 25, No. 3, June 1, 1932, an article by Stephens and Nook, the following statements are made; one particular statement deals with the fact that northern-grown plants are generally conceded to be free from dangerous nematodes:

"Apparently in spite of the fact that nematode was introduced at least as early as the spring of 1930, up to the

fall of 1931, that is after two growing seasons, the disease had accomplished nothing in that region (Minnesota).

"Of course we are not sure why the disease is not more common in northern states.

"Whether dwarf (nematode) will ever become important in northern states is of course an unanswerable question, but at present it is purely a southern problem and our experience to date makes it appear safe to say that in regard to yield the disease is of the greatest economic importance and decreases in severity as we go northward.

"On the other hand, nurseries either in the north or in the south which expect to supply southern growers with strawberry plants will find it necessary to use every precaution to keep the plantings free from disease, as the wise southern grower simply will not continue to buy plants from dwarf-infested nurseries. Adequate nursery inspection and careful certification offer the simplest, most direct and most promising line of attack.

"We should like to go one step farther and state our belief that the whole strawberry industry will benefit from the greatly strengthened system of nursery inspection.

"Fruit trees are sold chiefly to big growers and last from twenty to forty years, but many strawberry growers, both big and little, buy plants almost every year."

Thus, you see from the studies made by Stephens and Nook, the certification of strawberry plants in the United States is a mighty important thing.

U. S. D. A. Statements.

The following quotations are taken from circular 174, published in 1931 by the United States Department of Agriculture, written by M. E. Stephens, senior pathologist:

"On the basis of the present information, one of the most promising lines of attack for increased control of disease is just a matter of nursery inspection within the area where disease occurs and certification of disease-free plantings.

"If certification is necessary in the area where the disease occurs, certainly certification in an area where the disease is not known to occur is of utmost value."

Farmers' bulletin No. 1458, U. S. D. A., revised 1930, contains the following:

"Root-knot, on the other hand, is found to some extent in all except the more northern states, but is usually serious on strawberries only in the southern states. Dwarf is common in the southeastern states."

I have given you these quotations to bring out the point that many workers on the subject realize that certifications are of utmost importance.

Program.

Although our program is not perfected in every single detail, it is our endeavor to carry out the certification in line with the following suggestions in order to produce vigorous, disease and insect-free strawberry plants which can be certified in Minnesota:

(a) Select soil having plenty of humus

free from white grubs or other insects. Plow the ground and disk thoroughly before September 15 the previous year.

(b) Plant only strong plants that are free from insects and plant diseases; i. e. certified plants.

(c) Spray or dust plants immediately after setting out and at intervals of a week or ten days with arsenate of lead in a 4-4-50 Bordeaux mixture for the first three weeks and then at 2-week intervals.

(d) In many places it has been found profitable to water strawberry plantings. Overhead irrigation has been used in many places to advantage.

(e) During the growing season, rogue out any plants that appear to lack vigor either due to disease or insect injury or from any other cause.

(f) Keep varieties far enough apart to prevent mixing. We cannot certify even slightly mixed plantings as true to a variety.

(g) Keep the plantings free from weeds. It is not possible to make a good inspection when the planting contains many weeds.

(h) Either cover plants with sufficient mulch in the fall before the first severe freeze or store the plants indoors. Plants that show any injury in the spring will not be certified.

(i) Plants should be carefully packed so that they will reach the consumer without having become dried out or heated in transit.

(j) Only one-year-old plantings will be certified, and care must be taken to weed out seedlings to prevent them from going out under named varieties.

This same strenuous program is being applied to the production of all kinds of nursery stock in the state. Our program is intended for a service available to any fruit grower in the state interested in maintaining clean plantings, even though he is not interested in the production of plants.

there being unsurpassed in beauty and uniformity throughout.

All the chief cities and towns along the African coast from Cape Town to the Red sea were made ports of call, and the development noted is amazing, Mr. Kelsey remarks. The same holds true of the interior towns, now mostly all made accessible by railroads. The changes that have occurred since Stanley wrote "In Darkest Africa" stagger the imagination. Conveniences and luxuries abound in the larger cities like Zanzibar, with its population of 200,000 persons, and even in the smaller centers. One can now go in comfortable sleeping and drawing room cars all the way from Algiers to Cape Town.

FARGO FIRM REORGANIZED.

Magill & Co., operators of the pioneer Fargo Seed House, Fargo, N. D., announce a reorganization which strengthens a company that has done business throughout the northwest for nearly half a century.

H. E. Magill, son of and cofounder with S. G. Magill of Magill & Co., in 1887, continues as president of the company. W. H. Magill, who joined the organization in 1913, soon after it became a corporation, is vice-president and general manager. C. C. Wattam, Fargo attorney and secretary of the North Dakota Bankers' Association, is secretary of the company, and John C. Heisler, president of the Northwest Audit Co., Fargo, is treasurer. Joseph M. Heisler is the new assistant manager, and A. L. Peterson, president of the First National bank, Buffalo, N. D., is a director. In direct charge of the grain elevator and mechanical operations will be W. H. Sparrow, manager of the Berthold Farmers Elevator Co., Berthold, N. D., for eight years. About forty persons are normally employed.

PINE SHOOT MOTH RETREATS.

Thanks to the efforts of the C. C. C. and the weather, the European pine shoot moth seems to have suffered a severe setback in Connecticut. There are fewer infested areas this season, and these are much less severely affected than they were last year, according to H. W. Hiecock, assistant forester of the Connecticut agricultural experiment station, at New Haven.

It is estimated that there are 10,000 acres of red, Scotch and other susceptible pines in the state. In 1933 damage by the pine shoot moth was so heavy that owners despaired of control and considered replacing susceptible trees with kinds that do not attract the moth. Parts of New Haven, Fairfield and southern Litchfield counties were most severely affected.

Then the federal government came to the rescue. Last winter 170 C. W. A. men were assigned to work under supervision of the experiment station cleaning up pine shoot moth infestations. The work was done by clipping off and burning shoots in which larvae were spending the winter. Zero weather followed the initial campaign, killing some of the remaining larvae. But the most telling part of the work was done by C. C. C. men in the spring. The station directed about 200 boys in a final drive against the pest. The result was that few moths emerged in June to lay eggs for the next brood. Hence the better conditions in pine plantations.

Kelsey Commends Plan

New York Nurseryman, Back from Trip to Southern Hemisphere, Urges City's Tree Survey

MUNICIPAL STREET PLANTING.

Commenting on the public statement October 25 of the department of parks of New York city that immediate attention is to be given to a "Survey of a Million Trees" in the streets and to the care and planting of suitable trees on the streets, without cost, Frederick W. Kelsey, of the F. W. Kelsey Nursery Co., New York, declares this is assuredly a step in the right direction.

"The hodgepodge method heretofore adopted whereby any property owner can plant any kind of tree it may suit his fancy to set out, without regard to the effect of such planting as a whole, is seriously detrimental to the appearance of the city, as well as of any streets thus planted," Mr. Kelsey states.

"The rapid progress made in many other municipalities of the country regarding uniform street tree planting, as authorized by various legislatures, and for a comprehensive system of planting has for many years been a gratifying feature of municipal improvement. Under the New Jersey law of 1893, more than 125 shade tree commissions in different cities, towns and boroughs have since carried on uniform systems of street planting to the benefit, improved appearance and enhanced value of real estate." Mr. Kelsey, it should be said, was chairman of the Orange civic committee and drafted the original act of the nature discussed in New Jersey twenty-one years ago. The principal of home rule was included in the bill, the authorities in each municipality having the decision on the application of the law to their city or section. The commissions where the law was approved have much the same right as regards the planting and care of street trees as is customary in the method of providing improvements for street paving and curbing. They have the right to charge the owner for the cost of the trees and for proper guards.

"After the law was enacted," Mr. Kelsey continues, "Passaic was the first

city to adopt it. Newark was next and that city now has some of the best planted streets in the country.

The New Jersey law has been copied in substance in a number of the other states, and in Pennsylvania alone there are about 130 shade tree commissions improving the streets of various municipalities in the state. Had New York years ago adopted a similar law, the city would not be in the unfortunate condition regarding tree planting in which it is now placed.

"This plan of uniform street tree planting was adopted in many European cities and towns years ago. The beautiful effects of street planting in Frankfurt, Germany, are notable.

One feature of the plan of the New York park department which appears reasonably open to objection is the deposit of \$10 required by property owners for each tree to guarantee the 'proper performance of the specifications.' For a single tree, better results would apparently follow were this price less. Where many trees are required, as often occurs, this price becomes prohibitory.

"Nevertheless, on the whole, it is gratifying that the New York public is awakening to the desirability of prompt action in this matter of parkway and street improvement."

KELSEY BACK FROM LONG TRIP.

Frederick W. Kelsey, president of the F. W. Kelsey Nursery Co., New York, recently returned from an extended trip to South America and Africa lasting nearly three months. The journey, made on the S. S. Resolute, of the Hamburg-American Line, followed an itinerary never before scheduled by any steamship line.

Mr. Kelsey states that the journey was wonderfully interesting. He found Rio de Janeiro, Brazil, vindicating its reputation as the most beautiful city in the world, the avenues of royal palms

New and Worthy Small Trees

**Subjects Ten to Thirty-five Feet High to Vary Skyline
Of Shrub Border Described Here by L. C. Chadwick**

Plants in the small tree group may range from ten to about thirty-five feet in height, usually with only one main trunk issuing from the ground. Excellent foliage, flowering and fruiting plants abound in this group. Their size and habit of growth are such that they are especially useful for specimen plants on the home grounds of small or average size. Their free-flowering and fruiting habits adapt them to accent planting in the shrubbery border. Of greater height than the majority of border plants, they produce an interesting skyline effect to break the continuity of an otherwise monotonous border, and some hold their branches low enough to the ground to make effective screens. For these reasons this group of plants should become increasingly popular.

High informal hedge or screen plants can well combine interesting flowers and fruits with good foliage. Useful for planting frequently at corners and angles of houses, such plants obviate the necessity of using numerous smaller shrubs to obtain the mass effect desired. Some of the plants discussed here are not at all new, but their fine characteristics warrant their greater use.

Acer Griseum.

When first seen at the Arnold arboretum last summer, *Acer griseum*, the paperbark maple, impressed me as being a worthy companion to the paper and river birches because of its attractive brownish red exfoliating bark. Planted in groves alone or in combination with the paper birch, it should be especially attractive during the winter months. Color in the winter landscape picture is often lacking. This maple having compound leaves and growing to a height of about twenty-five feet will help to obviate this condition.

Carpinus Betulus globosa, the globe form of the European hornbeam, is decidedly formal. Distinctly globe-shaped in form, a specimen at the Arnold arboretum is about fifteen feet high and has a 12-foot spread in the middle. Closely branched, it should make an attractive formal specimen for accent planting and, if the supply becomes plentiful, excellent screen or hedge material.

Celtis Bungeana.

While *Celtis Bungeana* is almost outside the realm of the group of plants being discussed, since this species of hickory may grow to about fifty feet in height, it may be mentioned here. Nearly round in form, with attractive light gray bark and thick glossy green foliage, this plant should make a useful specimen tree. Clean in appearance, a specimen of this species seen at the Arnold arboretum was entirely free from the witches'-broom so common with *C. occidentalis*. The fruits are said to be purplish black and may persist for a considerable period after the leaves fall. As with *Acer griseum*, the use of this species of *Celtis* would help obviate the lack of color in the winter landscape picture.

Similar to the native flowering dog-

wood, *Cornus Kousa chinensis*, the Chinese species, is equally attractive in flower. It comes into bloom about three to four weeks after *Cornus florida* and, when combined with it, extends the flowering period of the dogwoods over a period of about six weeks. Reaching a height of twenty feet or a little more at maturity, the Chinese dogwood is frequently bushier and is graced with dark green leaves somewhat narrower than those of *Cornus florida*. Similar to that of *C. florida*, the brilliant fall foliage is much appreciated.

Evonymus Maackii.

A newcomer to the trade, *Evonymus Maackii* is certainly among the most attractive of the deciduous evonymus. Becoming fifteen feet or more in height at maturity, with a spread of about ten feet, and bearing abundant pink fruits, this plant may well be used as a small specimen or as filler material for the border. Excelling in fruits, a characteristic of evonymus, this species seems to be perfectly hardy at Columbus, O.

Those who have shunned the use of the common pearbush, *Exochorda grandiflora*, because of its thin, rather light green foliage cannot criticize *E. Giraldii*. Similar in most respects to the common pearbush, this species possesses more attractive foliage and reddish flowers, especially in bud. A variety, *E. Giraldii Wilsonii*, is said to be even better than the type, because of its more upright, vigorous growth and more abundant flowers. Blooming in early May, it is useful as a specimen and probably better for border planting.

Gordonia Alatamaha.

Also listed under the name *Franklinia alatamaha*, *Gordonia alatamaha*, a native of Georgia, may be of questionable hardiness in northern localities, but it is doing well at the Arnold arboretum and at a private estate near Philadelphia. Valued mostly because of its flowers in late August, white in color and about three inches in diameter, it is a welcome addition to the all too few fall-flowering shrubs and small trees. The leaves are large, up to six inches in length, and turn a brilliant red in the fall. Attaining a height of about thirty feet, it appears to prefer a rather moist, rich soil. While it is supposed to prefer acid soils, C. F. Jenkins, Philadelphia, writes that his plant has responded well to applications of lime. Cuttings are said to root readily only if placed in acid sand or peat moss.

Although not new to the trade, *Koelreuteria paniculata*, the goldenrain tree, has not been used extensively, possibly because of its doubtful hardiness in northern localities. It has, however, stood the past few years in Columbus, O., with little or no injury. Even a severe winter like that of 1933-34 left no harmful effects. A specimen tree to about thirty feet, it is especially attractive in late July when its yellow flowers are borne in large terminal clusters. The coarsely branched winter effect may be somewhat objectionable, although of striking color. *Koelreuteria* may be

readily propagated by seed or root cuttings.

Oxydendron Arborescens.

While the sourwood, *Oxydendron arborescens*, is said occasionally to attain a height of seventy-five feet or more, it seldom exceeds thirty or thirty-five feet. A native plant, found from Pennsylvania to Florida and west to Indiana and Louisiana, it is seen too seldom in landscape plantings. The fact that it does well only in acid soil undoubtedly accounts for its limited use. It is at its best when used in groves against an evergreen background, to set off its whitish terminal clusters of flowers in late July and the brilliant scarlet fall foliage. Few plants are as attractive during the late summer and fall months.

If landscape gardeners must use decidedly formal, weeping plants, *Sophora japonica pendula*, the pendulous form of the Chinese scholar-tree, may well be added to the list and substituted in many cases for Teas' weeping mulberry and the Camperdown elm. One specimen growing at the Arnold arboretum is about fifteen feet high, with the branches spreading about fifteen feet. The small, oval leaflets make this plant more refined than most of the other common weeping plants now used.

Stewartia.

Among the most outstanding of the flowering small trees are the stewartias. Two species, *S. koreana* and *S. Pseudo-Camellia*, are large, reaching to fifty to sixty-five feet at maturity. These two species have large, white flowers about two inches in diameter in late July and August. The large leaves, three to four inches, and upright, zigzaggy branches of *S. koreana* are attractive. The leaves of *S. Pseudo-Camellia* are smaller and hardly so attractive, but the flaky brownish red bark is pleasing.

Perhaps the most striking stewartia in flower is *S. pentagona grandiflora*, native from North Carolina to Tennessee and Florida. Smaller in size, seldom exceeding fifteen feet in height, it has, in addition to its attractive flowers, large, bright green leaves, somewhat peach-like in shape, but larger, that turn a bright color in fall. The flowers, three to four inches in diameter, appearing a little earlier than those of the other two species, have white fringed petals and purple blue stamens. Few plants possess such attractive flowers as these, which are produced over a period of about four weeks. As a specimen small tree, this species has few equals.

Symplocos Paniculata.

Any plant that possesses the combined characteristics of good form, foliage, flowers and fruits should be used as often as possible in landscape plantings. Such is the case with the Asiatic sweetleaf, *Symplocos paniculata*. Said to attain a height of as much as forty feet, it seldom exceeds twenty or twenty-five feet. It is of compact, rounded habit of growth, with horizontal spreading branches that bear bright green leaves

and fragrant, small white flowers in clusters two to three inches long in May and June. In September, the plant is attractive with its bright blue fruits about one-third of an inch in length. There are so few plants with blue fruits that the sweetleaf should be a welcome addition from the standpoint of fruits alone, regardless of its other outstanding characters. Said to do best in an acid soil, it should be used by landscape gardeners wherever possible.

USEFUL GROUND COVER.

In The American Nurseryman for October 1, 1934, there is an interesting article on "New and Noteworthy Ground Covers," by L. C. Chadwick. This is an important topic at all seasons, there being more demand for these subjects now than ever before.

One valuable ground cover plant, the merits of which do not seem to have been fully discovered thus far, is *Ophiopogon japonicus*. This is a dwarf evergreen, rarely more than six inches high, a beautiful green semituberous herbaceous perennial that is hardy in the east and will stand sun or shade. The plant has been distributed often by the office of plant introduction in Washington and it is valued much in the west.

There is a story to the effect that for years a suitable ground cover was sought for the area adjacent to the Washington monument in Washington, D. C., to avoid the need of lawn mowing, and *Ophiopogon japonicus* eventually served the purpose well.

Many are the situations where similar conditions obtain, and here is a plant that can be used. It is easily increased by division; in fact, it has no drawbacks, as the flowers are inconspicuous, being borne below the dense mat of foliage. There is another, *Ophiopogon Jaburan*, with its many forms of variation, but the plant under note must not be mistaken for *Ophiopogon Jaburan*.

E. O. Orpet,
Santa Barbara, Cal.

BATTLE OVER FOREST BELT.

The merits of the plan to belt the country's midsection with a hundred-mile-wide strip of trees has brewed an undercover fight among foresters at the nation's capital that may break into the open before the matter goes to Congress.

Through the middle west studies are being made upon which the forest service will base its recommendations to President Roosevelt for transmission to Congress. These studies involve soil, climatic and other factors which will affect the growth of trees.

F. A. Silcox, chief forester, said the service was prepared to go ahead with the plan when provided with the approximately \$75,000,000 it would cost. One million dollars was allowed for the study.

In the meantime, however, widely varying opinions have been expressed by members of the various forestry associations, which some of those familiar with the course of the project expect to see flare into a heated discussion at the January meeting of the Society of American Foresters.

H. H. Chapman, president of the society, has expressed the opinion that the idea is fantastically impossible. Walter Mulford, of the University of

California, a former president, has said the plantings had small chance of success and recorded "grave misgivings" as to the plan. He said trees could be grown in the area by skilled selection of species, care and a disregard of cost, but added, "What a pity that such a sum be not spent for more substantial and more promising conservation projects applied to existing forests."

Other foresters will come to the January meeting of the society, however, to favor the program, arguing that in Nebraska a big reforestation project has been under way for years, and that farmers have grown shelter belts in thousands of places.

The American Tree Association was said by officials not to have recorded itself in any way on the shelter belt project.

The study under way in the area is devoted not only to explorations of what has happened to other trees that have been planted in the area and to the general feasibility of the project, but to the collection of seeds and the arrangements for proceeding with the project.

Mr. Silcox said about five million trees would be ready for planting by next spring. Poplar, green ash and locust trees are best adapted to the area, he said, but some species of pine and Russian olive trees also would grow there.

Some variations have been made in the original rough plans for location of the area, Mr. Silcox said, but it would cross sections of North and South Dakota, Nebraska, Kansas, Oklahoma and Texas.

D. OF A. BUYS NUT TREES.

Efforts of the United States Department of Agriculture to improve the quality of nuts in this country has received new impetus with the recent removal of approximately 10,000 nut trees from the nationally famous Bixby collection on Long Island to land under federal supervision. This is believed to be the largest single transplanting of nut trees ever made, according to C. A. Reed, of the bureau of plant industry, who supervised the work. Most of the trees were of nursery size, one to three feet in height. The largest trees moved were about eighteen feet high and three inches in diameter at the base.

Approximately one-fourth of the trees eventually will go into the Shenandoah National park. The rest were allotted to various divisions of the Department of Agriculture for experimental work. More than one-third of these were added to the nut plantings on the department farm at Beltsville, Md. Approximately 700 trees were allotted to the recently acquired national arboretum in Washington, D. C. About 500 went to the forest service, to be planted at Troy, N. C., and more than 1,000 disease-resistant chestnuts were allotted to the division of forest pathology. Funds for acquiring the trees were provided by the director of emergency conservation work.

The Bixby collection of nut trees, which was started by the late Willard G. Bixby as a hobby in 1916 and continued until his death recently, was the largest and finest in existence. The trees acquired by the government consist of black and Japanese walnuts; butternuts; sweet, shagbark, shellbark, bitternut and pignut hickory; Chinese,

Korean, Japanese and European chestnuts; American, European and Turkish filberts, and hybrids of many varieties and species.

Scions from the best nut trees which are found will go to state experimental stations for further trial. Those that finally do best will be put into the regular commercial channels.

SEEKS BEST NUT TREES.

A search for native trees which produce nuts well above the average in general merit has been started by the bureau of plant industry of the United States Department of Agriculture in an effort to obtain varieties which will be not only ornamental shade trees, but will produce excellent food as well. Developing such trees always is a lengthy process and, if from seed rather than from scions, most uncertain.

C. A. Reed, nut specialist in the department, is inviting persons who have black walnut, butternut, hickory, northern pecan, native hazel or even beech trees that bear nuts of excellent quality to send him a sample for examination. He would like even sweet acorns that are good to eat. The sample, about two pounds of the larger nuts and about a pound of the smaller varieties, should be wrapped securely, carry name and address of the sender and be mailed to C. A. Reed, U. S. Department of Agriculture, Washington, D. C. Each lot should be carefully marked as to the tree from which the nuts came. Only first-class and superior nuts should be sent, but samples may be supplied from more than one tree. A letter with full particulars should be sent also.

The department cannot pay for the nuts, but not later than February 1 Mr. Reed will report by letter on the merit of all nuts in comparison with others. If any person has a superior nut tree, the fact will be made public so that those interested may purchase scions.

U. S. D. A. STATION MOVED.

Field work on the control of the Japanese beetle and the Dutch elm disease and inspection and certification for the gypsy moth and the European corn borer will in the future be directed from White Plains, N. Y., Lee A. Strong, chief of the bureau of entomology and plant quarantine of the United States Department of Agriculture, has announced. This work was formerly done at Harrisburg, Pa. L. H. Worthley, who has been in charge of the Harrisburg station, will direct the work at White Plains.

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CONNECTICUT ELM SURVEY.

Only one elm in Connecticut outside of Fairfield county was found with Dutch elm disease in a survey conducted under the direction of George P. Clinton, botanist; Walter O. Filley, forester, and W. E. Britton, entomologist of the Connecticut agricultural experiment station. It covered the entire state exclusive of the section of Fairfield county, where the federal office for Dutch elm disease is at work.

Tree climbers, men familiar with Dutch elm disease, went out from the New Haven station in parties of two. They inspected about 90,000 trees. Of these, 1,977 were examined as possible Dutch elm cases and samples were taken. Cross sections of 120 twigs showed the brown discoloration characteristic of the disease, and these specimens were sent to the New Haven station for laboratory culture. Only one tree, growing in Old Lyme, was confirmed with the disease.

The significance of this single case, however, is tremendous, according to tree specialists. It occurs many miles away from Fairfield county, heretofore the northern and eastern limit of the disease. None of the European elm bark beetles, believed to be carriers of the disease, were present. Instead, a native beetle, *hylurgopinus*, infested the bark. When placed in a test tube with twigs of healthy elm, these beetles immediately bored into the bark. Later a culture taken from the twigs showed Dutch elm disease, suggesting that this American beetle is also a carrier.

ACTIVE AGAINST ELM DISEASE.

Agricultural, horticultural and forestry interests of Rhode Island are actively making plans to combat the Dutch elm disease, and various associations identified with these branches have appointed representatives to attend all gatherings where this matter is to be discussed.

At a meeting of representatives from each of the New England states held at Boston, Mass., November 19, Rhode Island was represented by the following: Harry R. Lewis, state commissioner of agriculture; Prof. A. E. Stene, state entomologist; Dr. Harold W. Browning, of the Rhode Island State College, Kingston; Dr. Walter O. Snell, of Brown University, Providence; William G. Aborn, president of the Rhode Island Arborist Society; Leonard H. Spence, of the state board of public roads, and Harry Horowitz, of the Rhode Island department of agriculture. Dr. Browning was elected a member of the executive committee.

KEEPS DOGS AND CATS AWAY.

After much research work, there has been developed by Mell-Norr, Fort Wayne, Ind., a product known as Marvel dust spray, a much-needed dog and cat repellent, keeping these animals from lawns, flower bed gardens, porch pillars, garbage pails, etc.

This product is put up in powdered form in handy attractive packages, retailing at a small price. The powder is harmless to man, beast or plant life. It requires no mixing and is ready for use, to be sprinkled wherever desired.

Marvel dust spray outlasts many rains, and although the odor is agreeable to man, it is obnoxious to animals and they will not stay where it has been

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sprinkled. It may be carried in stock without fear of deterioration for an indefinite period.

Many millions of evergreens, as well as other shrubs, are ruined every year by dogs' discoloring and killing them. This can be avoided by the use of such a spray, which is effective all the year and especially during winter, when more are destroyed than at any other season.

NEW PLUM PATENTED.

A patent was issued November 13 for a plum, according to Rummler, Rummler & Woodworth, Chicago, patent lawyers:

No. 111—Plum. Jennie Benedict Thompson, Pasadena, Cal., assignor to Armstrong Nurseries, Inc., Ontario, Cal. A variety of plum tree characterized particularly by its globular, sweet-flavored, maroon-colored fruits having rather thick, sweet skins.

ELOF SANDSTROM, nurseryman of Crystal Lake, Ill., is building a greenhouse 18x25 feet.

THE East Bay Nursery has been started at 2332 San Pablo avenue, Oakland, Cal. The manager is Y. Iwahashi, Berkeley.

To do a general nursery business, the Garden Seed Co. of America has been incorporated at Wilmington, Del., with capital of \$20,000 and 2,000 shares, no par value.

WALTER E. CAMPBELL, proprietor of the Piedmont Gardens, Greensboro, N. C., spoke before the Durham Garden Club, Durham, N. C., November 13 on "The Comparative Values of Flowering Shrubs." This makes over 100 talks Mr. Campbell has made before garden clubs in four different states in the past four years.

Herbaceous Perennials

C. W. Wood Comments on Less Common Varieties of Hardy Plants Deserving Attention

ANEMONE VERNALIS.

One of the principal reasons that we do not make the rapid advances in horticulture which some think we should is because of our standardized lives, a standardization which has extended into our garden making. As a consequence, a relatively few kinds of plants are used in our operations, leaving a vast number of really good ones in a state of half-use and an even larger number entirely lost in the realm of the unknown. Commercial growers are largely to blame for this condition, for they, more than all others, have restricted themselves to a scanty number of easily manipulated subjects. The time has come, though, when the grower who does not widen his field of operations is going to be outdistanced by his more progressive brother or lost in the mire of profitless prices on overdone plants.

If the foregoing reasoning is not correct, how are we to account for the almost complete absence of the lady-of-the-snow, *Anemone vernalis*, from the lists of American plant growers? In it we have one of the most entrancing of all wind flowers, ranging in its natural state over much of Europe from the Scandinavian peninsula and Russia southward through the mountains of central Europe and winding up as an alpine on the peaks of Spain. And in all of these countries it is beloved of country folks and gardeners, having woven itself into garden literature under numerous endearing names.

It is a fury little thing, revealing itself when the snows of winter first melt away as a tiny, silky rosette pressed close to the earth. Farrer, in his interesting way, speaks of it as follows: "Two or three thin-looking, carrot-like leaves, lying pressed to the ground; an inch or so of shaggy stem, all covered with the most lovely bronzy-gold fur; then a fluffy cup of the same; and then, goblet-shaped, sumptuous and splendid, a magnolia-like flower, snow-white within and silky without, ashimmer with gold, fawn and pearl-white—that is the lady-of-the-snow, and her glistening cup is brimming over with the golden foam of her stamens."

I have quoted from Farrer to this length with the hope that his enthusiasm for this lovely wind flower may waken a semblance of his feeling in the readers of these notes. It, as well as hundreds of other exquisite gems of the plant world, should become a part of our everyday lives. And if you and I do our parts well, that happy, as well as prosperous, day will not be far off.

In the case of *A. vernalis*, it is not because the plant is unduly difficult that it has remained rare, though it may be somewhat unruly where the summers are extremely hot and dry. It is used to rather cool, moist treatment in its native haunts and desires similar care when it is brought into the garden, though it will do on much less moisture than it gets in its alpine home. Judging from my own experience under mid-west conditions, I should say that the plant is best in a fifty-fifty mixture

of leaf mold and sandy loam in a situation that is fairly shady during mid-day. A lath frame is an ideal place for its commercial production, which may be accomplished by seedage or division, preferably the former. Fresh seeds planted in an outdoor frame in late fall should germinate well the following spring.

CAMPANULA PERSICIFOLIA.

Although it is not rare, the peach-leaved bellflower is not a bit more popular than its merits warrant, but it can be said with all truth that some of its improved forms are woefully neglected. Such is the case with that much discussed plant, Telham Beauty. This plant, a come-by-chance in an English garden, it is said, first attracted the attention of modern gardeners in 1916, when it was shown at an exhibition of the Royal Horticultural Society by Barr & Sons. The campanula "cranks" of England immediately went into a huddle, with the result that their horticultural press was liberally sprinkled with a discussion of the plant for a long time, culminating in a résumé of its genetical history in the June 5, 1926, issue of the English Gardeners' Chronicle. In this article the author attempted to show that a plant of *C. persicifolia*, ostensibly the same as Telham Beauty, had reached England from South Carolina in the last decade of the eighteenth century. It is all a matter of chromosomes, the scientific brothers tell us, and is likely to happen once in awhile. It does not happen often enough, though, to enable one to grow Telham Beauty from seed, a fact which accounts for the circumstance that it has made little headway in this country since it was sent here in 1919. It is a magnificent plant, however, with its 3 to 4-inch flowers of powder blue on 2-foot stems, and is worthy of the care required to propagate it by vegetative means.

Another very fine form, Pride of Exmouth, is known to me only from what I have read of it in the English press. I have tried it from seeds, but do not get anything that approaches the enormous spikes of huge flowers pictured in their papers. It is mentioned here with the hope that some one on this side may make it possible for American gardeners to enjoy this latest addition to the peach-leaved group.

One can grow the variety Moerheimi from seed with more assurance of getting the true thing. This is a double-flowered white, with flowers as much as three inches in diameter, and is especially good for cutting, though it lacks nothing in the way of being a garden ornament.

In addition to these and other named forms, there is a wealth of good material for the garden and for cutting to be found in a packet of seeds of modern giant hybrids. To grow a lot of these from one of the better strains resembles the magician's pulling seemingly impossible objects out of the silk topper, for one gets a wide range of

shades of blue and an occasional white; singles, semidoubles and doubles far larger than were thought possible a quarter of a century ago, and an occasional giant plant that will make four feet in height.

PRIMULA BEESIANA.

This primrose is one of the few of that vast race which we of the United States may enjoy without incessant work and worry. Let us admit at the outset that it is not one of the most beautiful, but I, for one, cannot follow Farrer when he says that "it is rather coarse in growth and has blossoms suggesting a virulently magenta form of *P. japonica*." Nor can I agree with Mrs. Wilder when she says that it is "one of the treasures of the garden." Somewhere between these two extremes *P. Beesiana* finds its true niche.

Aside from the fact that it is a good garden ornament when it is given the proper companions, this primrose is an easy doer, asking for no more than a moist spot, though the flowering period will be much longer and the plant will stand our summers much better if it is given some shade. With me it usually commences to bloom the first or second week in June, its near-crimson flowers coming in tiers as the stem elongates to a foot or more in length, continuing from that time until August if things are to its liking. Seeds of this year's crop planted early next spring should germinate readily and the resulting plants grown along in a shaded frame should make good specimens by fall.

SAXIFRAGA LONGIFOLIA.

My own experience with saxifrages has been so meager I hesitate to say much about them, but I rather think I can tell *Saxifraga longifolia* when I see it. And that is much less often than one sees other plants bearing its label. This confusion seems to extend all through the euazoonia section of the genus, probably resulting from its habit of hybridizing so readily, and this accounts for the multitude of forms one sees labeled longifolia.

The true species is a monocarpic plant, dying as soon as flowering is over and seeds have been matured. It forms one huge silvery rosette and never produces a single offset to carry on its story of beauty. Its habit of intermarrying among others of the incrustated section, though it confounds the stickler for correct naming, has enriched the garden with numberless hybrid forms, many of them of surpassing beauty and most of them able to perpetuate themselves by vegetative means. Tumbling Waters, among others, said to be the finest hybrid longifolia has ever produced, should be made available to gardeners in this country.

Seeds of species of this section germinate readily and, although the plants do not always come true to type, they are seldom without garden merit. They are among the easiest of high alpine plants to manage in the garden, doing well in a crevice that is shielded from the sun during the hottest part of the day.

C. H. MUCKLER, operating a nursery known as Peacock Gardens eight miles east of Port Angeles, Wash., recently opened a sales yard at Port Angeles, at Eighth and Lincoln streets.

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CATALOGUES RECEIVED.

In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in this column of The American Nurseryman.

VAN NESS WATER GARDENS, Upland, Cal.—Catalogue of water lilies, succulents, goldfish and aquatic plants. In addition to complete descriptive notes on varieties, there are many practical pointers on the construction and maintenance of a pool offered in the text, along with half-tone illustrations portraying various items. The tropical water lily, Panama Pacific, is shown in colors on the cover.

BOLEN FLORIST & CAMELLIA GARDENS, Lucedale, Miss.—The current circular of this firm indicates a change in operating name from the Bolen Nursery & Orchard Co. This action was taken, it is explained, because only camellias and plants used in its flower business are now being propagated. The circular describes camellia varieties offered wholesale.

SHERWOOD NURSERY CO., Portland, Ore.—Fall wholesale list of evergreens and shrubs. Conifers and broad-leaved evergreens are specialties, as testified to by the large and interesting selections in these groups, including many rare items. Chamaecyparis, junipers and thujae are especially complete. Azaleas, brooms and hollies are also noteworthy. A few deciduous subjects appear. The descriptive notes are extensive and the range of sizes offered is generally large. Climate and soil conditions at the nursery are said to be ideal for proper culture.

GLENDALE FARM & GARDEN, Perry, O.—Wholesale price list of Lillium regale and Lillium tenuifolium, both bulbs and seeds; peonies, and funkias.

HENRY F. MICHELL CO., Philadelphia—Fall wholesale catalogue of bulbs, seeds and plants for florists and market gardeners. Perennials, forcing material and the usual greenhouse lines are included among the plants, along with a large selection of seeds and sundries for florists. An interesting array of novelties is distributed through the catalogue. The firm's retail catalogue consists of seventy-two pages, with a cover in four colors featuring tulips.

STORR & HARRISON CO., Painesville, O.—Retail nursery catalogue, with the usual major groups of spring bulbs, peonies and other perennials, roses, shrubs, evergreens, deciduous trees, fruit trees, etc.

TERACE GARDENS, Ionia, Mich.—Fall price list of dahlia clumps in about fifty varieties for shipment up to December 1. The material offered is described as irrigated stock, the clump containing three to five or more divisions.

H. H. ROBINS, Chagrin Falls, O.—Price list of about 100 varieties of dahlias. It is stated the year 1934 has been the most successful in the firm's career. Selected California dahlia seeds are offered in limited quantities.

RUSCHMEIER DAHLIA GARDENS, Rockville Center, N. Y.—Advance price list for 1935 of "exhibition dahlias," including pompon and miniature types along with the larger forms.

FRANK'S DAHLIA GARDENS, Bedford, O.—Wholesale price lists of dahlias. The offers of clumps to be shipped up to January 1 have special florists' varieties marked. The spring list gives prices for roots and plants in a number of instances. The selection is noteworthy for the many new varieties. The smaller types are included.

DELIGHT-U GARDENS, Indianapolis, Ind.—Wholesale and retail price lists of dahlias. Prices on plants, roots and clumps are given for the trade.

DECIDUOUS TREE GROWTH.

Part two of the annual report on forestry plots made by the Morton arboretum, Lisle, Ill., and published in the current "Bulletin of Popular Information" is concerned with deciduous trees. Comparative data for three years are given on the maximum, average and minimum growth for various species.

The introductory note states that during the first year of the 2-year drought period undergone, growth retardation was most noticeable among trees in the deciduous plots. After two years of extreme heat and moisture deficiency, however, it was found that the deciduous trees had been able to adjust themselves to the adverse conditions more successfully than the conifers.

Of the seventy-nine deciduous plots reported on in the issue, nineteen per cent of them show increased maximum growths over last year's figures. Slightly more than twenty-four per cent show greater average growths. In comparison, twenty-three per cent of the fifty-six conifer plots showed greater maximum growths and only twelve and one-half per cent increased averages.

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New Books and Bulletins

FLOWERS IN NATURAL COLORS.

It would have been difficult to devise a more effective way to stimulate the growing appreciation of native plants than to make possible for wide distribution a volume such as "Wild Flowers" recently published by the Macmillan Co., based on a work of similar title originally issued by the state of New York. The author of the book is Homer D. House, state botanist of New York.

The material was prepared first for the New York state museum, to provide a comprehensive survey of the wild flowers in New York state, a fact, however, which in no way limits the usefulness of the volume, as the great range of subjects portrayed and described includes plants to be found from border to border of the United States.

The new book contains in a single volume all the essential features of the original 2-volume edition. In no other one work can be found so many or such excellent reproductions of color photographs of American wild flowers. Nearly 400 subjects are reproduced in actual size and natural colors. Of a total of 365 color plates, 165 are full-page, in addition to which are a number of half tones and line drawings.

The exactness of the color work has been widely acclaimed. Nothing short of perfection was deemed worthy to be used. Such work meant a great expense which under ordinary conditions would have made the book cost about \$25, it is estimated. The permission of the board of regents of the state of New York to reproduce the illustrations is chiefly responsible for the moderate price at which the new book is offered, \$7.50.

To accompany each subject illustrated there is a paragraph or more of descriptive material. In this are given the botanical features of the plant, including the blooming date; mention of the parts of the country where the plant is to be found, and often an enumeration of related plants and of other plants growing in the same association. Occasionally, too, is given a key to the entire family. The text alone occupies 340 pages.

There are numerous features which make the book particularly useful for identification purposes. The exactitude of the reproduction is, of course, a major point, while the accompanying descriptions will yield conclusive evidence. Both popular and botanical names are used in the titles and in the index, which occupies twenty pages. Besides all this, there are twenty-three pages devoted to a discussion of plant structure, given as introductory material, in which are used twenty line drawings showing the botanical structure of wild flowers and plants adapted from Gray's "Lessons in Botany."

The physical appearance of the book is in keeping with the high order of the contents. Of large quarto size, it measures 9½x11¾ inches, with an attractive and durable green cloth binding that is stamped in gold. The highly glazed paper makes for the best possible reproductions of the engravings. Even the dust jacket is embellished with two large illustrations, the Ameri-

can globe flower appearing on the front and the wild lupine on the back. The introduction by the author is essentially a plea for the preservation of the native wild flowers, which, he believes, cannot help but follow familiarity with their beauty.

BULLETINS RECEIVED.

"Normal Crops and the Available Supply of Soil Manganese," bulletin No. 246 of the agricultural experiment station of the Rhode Island State College, Kingston, R. I., by Basil E. Gilbert. This is a 16-page circular describing the experiments carried on for several years at the Rhode Island station to determine the nature, causes and correction of certain deficiency diseases. Chief among these has been the chlorosis, or yellowing, of leaves of various plants, which has been linked with lack of available soil manganese and with soil alkalinity. Applications of manganese sulphate dissolved in water and applied as a spray or by mixing it with fertilizers were found to correct manganese chlorosis. Maintaining a suitable soil acidity proved a preventive factor.

"Putting Green Grasses and Their Management," bulletin No. 245 of the agricultural experiment station of the Rhode Island State College, by H. F. A. Norris and C. E. Odlund. This is a comprehensive 44-page report of experiments to determine the comparative value for golf greens of a large number of grasses in Rhode Island. Seed sources are discussed, as well as weed, disease and insect control.

"Raspberry Growing in Michigan," circular bulletin No. 152 of the agricultural experiment station of the Michigan State College, East Lansing, Mich., by R. E. Loree. This publication provides a detailed survey of the industry indicated by the title. Acreage and production figures are given along with mention of the possibilities of the industry. The chief factors to be considered in the commercial culture of raspberries are also discussed. Maintenance pointers and notes on varieties complete the work. The author states that he has drawn rather freely on material published in earlier state bulletins that are now out of print.

"Studies in Tolerance of New England Forest Trees," bulletin No. 379 of the University of Vermont, Burlington, Vt., describing the influence of soil temperature on the germination and development of white pine seedlings. W. R. Adams is the author.

WITH capital of 5,000 shares, no par, a nursery business under the name of Frank M. Page, Inc., Springfield, Mass., has been incorporated, by Frank M. Page, Webster E. Collins and N. L. Snow, all of Springfield.

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BEETLE FOUND WEST OF ZONE.**No Quarantine Hearing This Year.**

The Japanese beetle this year set a new record for establishing itself far from the zone where it has been a common pest. The United States Department of Agriculture, in its annual scouting to check up on the spread of this beetle, found a well established infestation at St. Louis, Mo.; a less extensive one at Indianapolis, Ind., and another at Charlottesville, Va. With these three exceptions, no real infestation came to light outside the beetle's established range in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, New Jersey, Pennsylvania, Rhode Island, Vermont, West Virginia, Virginia and the District of Columbia.

By catching a ride on plants or other materials, Japanese beetles are likely to establish themselves at points remote from the area along the Atlantic seaboard where they are firmly entrenched. To delay long-distance advances, the Department of Agriculture, through federal plant quarantine, seeks to keep all products that might harbor the beetle from being shipped from infested to noninfested territory. The beetles responsible for the recent outbreak in St. Louis, according to Lee A. Strong, chief of the bureau of entomology and plant quarantine, may have traveled across the country from the generally infested area in any one of a number of ways, and the same is true, Mr. Strong adds, of the Indianapolis and Charlottesville infestations. The more probable means of long-distance transportation are freight cars, tourist movement and illegal shipments of material carrying eggs or larvae of the beetle.

Control Program at St. Louis.

The largest control program ever undertaken against the Japanese beetle at an isolated infestation, Mr. Strong says, is now under way at St. Louis. Lead arsenate provided by the federal government is being applied to all the soil in the 117 city blocks infested. The local relief administration is supplying laborers to assist in applying the material and the city fire department is lending hose lines. Similar measures, though on a smaller scale, will go into effect in the limited sections found to

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be infested in Indianapolis and Charlottesville.

Because of a curtailment in funds, only 31,000 of the 56,000 traps owned by the Department of Agriculture were used this year in scouting for the Japanese beetle. These traps were operated from Virginia to Maine. The first traps were put out about the middle of June and the last one was taken up late in August, the distribution progressing northward with the dates of probable beetle emergence. New catches were recorded in five cities in Maine; in fifty-eight Maryland communities, both inside and outside the regulated zone; in Detroit, Mich., where a few beetles have been trapped each year since 1932; in nine New York cities; in six localities in Ohio; at Erie, Pa., where an infestation was discovered in 1931; in six cities in Virginia, and at seven points in West Virginia. In none of these places is the beetle well established. Either the numbers found were too small to constitute real infestations or the beetles present were the survivors of incipient infestations that are not increasing, as shown by successive years of trapping.

The results of the season's scouting, Mr. Strong announces, show no need for changing the existing quarantine or bringing any additional territory under quarantine. The quarantine already in force in the infested areas will be continued.

NATIVE IRIS RESEARCH.

The story of the discovery and extensive study of large natural fields of irises in southern Louisiana forms the interesting topic of an illustrated 8-page circular recently issued by the Cypress Knee Nursery, Algiers, La., which is engaged in gathering, propagating and distributing the native irises to preserve them from destruction. In this work, Dr. C. V. Kraft, proprietor of the nursery, is working in co-operation with Dr. John K. Small and the New York Botanical Garden.

The iris reaches its maximum development in Louisiana, it is stated, and several thousand specimens of the mammoth iris, some more than seven feet tall, grow in the southern part of the state, in more than 200 hues, including variations of violet, lilac, henna, orange and old rose, as well as all shades approaching red and blue. Many of the plants are collected from swamps at great hazard; others come from elevated sections. At the nursery they are set in rows, where they can be classified and the seeds can be collected.

Splendid success has attended the transplanting of these native irises, which have been shipped to many parts of the world. In this country they prove hardy as far north as Canada, it is said, requiring in the northern states a dry but rich soil. Splendid for planting in masses, the irises are also said to bloom well in early spring under large shade trees.

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